

LAWRENCE J. SCHOEN, P.E., Fellow ASHRAE

SUMMARY

An engineering and management expert with over thirty years of experience and broad knowledge of building services engineering, the indoor environment, mechanical and electrical systems design and maintenance, environmental compliance and remediation, vertical transportation, property management, economics, risk management and regulatory issues. Internationally known ASHRAE fellow, speaker and author experienced in public and media relations, senior management briefings and testimony.

EXPERIENCE

Schoen Engineering Inc., Columbia, Maryland, www.schoenengineering.com

1995-present President and Principal Engineer

Founded engineering consulting firm to provide cost-effective, sustainable mechanical and electrical (MPE) solutions for the Real Estate, Retail and Architectural community licensed in multiple states and practicing internationally. Specialists in improvements to MPE infrastructure, commissioning, energy efficiency, indoor temperature, air quality and operations in existing buildings; MPE base building and retail tenant coordination; and creating safe and healthy indoor environments where occupants are comfortable and productive.

Clients include General Growth Properties, The Rouse Company, Marketplace Philadelphia (PHL Airport), Federal Realty Investment Trust, various property managers, retailers and office tenants, Johns Hopkins University Hospital, United Family Hospitals (China), Post Apartment Homes and other multi-family owners, Pepco Energy Services, Viron Energy, PPL Energy Services, BOMA International, ASHRAE, Military District of Washington, Bureau of Alcohol, Tobacco & Firearms, Internal Revenue Service, University of Maryland, Maryland Institute College of Art, Black & Decker, McCormick & Co., Cosmos Club, Metropolitan Club, Norbeck Country Club, DC Jewish Community Center, various religious facilities, Johnson Controls, EMCOR and other contractors, architects/engineers and law firms.

Projects include tenant coordination at Rockville Town Square, Pentagon Row and Assembly Row (Somerville), chiller plant overhaul at IRS headquarters, energy performance contract at five army bases, for Military District of Washington, energy audit at Smithsonian Institution, author of BOMA's Preventive Maintenance and Emergency Preparedness Manuals and Users Manuals for ASHRAE's Air Quality and Thermal Comfort Standards.

The Rouse Company, Columbia, Maryland

1985-1995 Manager of Mechanical Engineering and Environmental Compliance

Direct capital, maintenance, operations and procurement programs in 60 million ft²: HVAC, vertical transportation, Utilities, plumbing, fire protection, electrical and environmental. Manage multi-million \$ annual capital, led and trained 250 field personnel of commercial building space, authored maintenance and environmental manuals and quarterly operations newsletter.

Designed and implemented CFC compliance and phase out plan for 200 centrifugal chillers recognized by NJ DEPE as model program. Led on site mechanical/electrical engineering following Hurricane Andrew (1992) - Town & Country Center opened in two days, restoring \$.5 million in daily sales. Improved vertical transportation maintenance, capital expenditures and five year planning resulting in 75% reductions in unplanned outages and saving \$.3 million each year. Negotiated national accounts with three major elevator vendors, designed and implemented escalator reporting and follow-up system resulting in 61% reduction in insurance claims paid at the same time reducing maintenance costs 25%.

Jaros, Baum & Bolles, Consulting Engineers, New York City, Project Engineer, 1981-1985

Design and construction services for mechanical systems in commercial and institutional buildings for IBM, Tishman Construction, CIGNA, Philip Morris and Department of Defense and others including existing building tenant improvements. Analyzed building energy performance data and wrote reports for DOE-funded project under Tishman Research (PSE&G, Newark, NJ).

CODES, STANDARDS & REGULATION: ASHRAE Standards & 62.1, 55, 180 and 189.1 Committees: Design of High Performance Green Buildings, Indoor Air Quality, Thermal Environment and Maintenance, 1996-present. IMC (Mechanical Code) Committee member, 2006-7. Maryland Department of Environment air quality control advisory council (AQCAC), 1998-present.

TRADE ORGANIZATIONS:

ASHRAE IAQ 2007 Healthy and Sustainable Buildings Chair (IAQ2007.org), Standards Committee, Environmental Health Committee Chair.

BOMA International (Building Owners & Managers) mechanical engineering consultant and representative to other codes and standards development organizations, 1995-present.

ASME (Mechanical Engineers) Past Chair Baltimore Section, member IEBE, (Institute of Electrical & Electronics Engineers), ISIAQ (International Society of Indoor Air Quality and Climate)

ICSC (Shopping Centers) air quality and environmental task force committee member, 1995-present

HONORS AND AWARDS: ASHRAE Environmental Health Award for achievement in the indoor comfort & health, 2013, Distinguished Service Award, 2013, Advancement to Fellow ASHRAE 2003, ASME Industry Award, 1995, Energy User News Efficient Buildings Award, 1994 for the Rouse Company Headquarters Building.

LANGUAGES: Speak French, Hebrew, some Standard Chinese.

LICENSED Professional Engineer (PE) in DC, DE, MA, MD, NJ, NY, PA, VA, CEM (energy), CIPE (plumbing), prior QEI (elevators), Amateur Radio (KE3KE), First Grade (Stationary) Engineer.

SAMPLE PUBLICATIONS AND SPEAKING ENGAGEMENTS:

Airborne Infectious Disease Position Document 2014, committee chair and editor, American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), *ASHRAE IAQ Applications*, Contributing Editor with regular Column on practical applications of recent indoor air quality (IAQ) Research, 2009 to present. *ASHRAE Standard 62.1 User's Manual*, ASHRAE, 2005, 2007 & 2010. *Preventive Maintenance and Building Operating Efficiency*, 2003 and 2010 and *Emergency Preparedness Guidebook*, 2012 for BOMA International.

Numerous speaking engagements for Amer. Soc. Testing & Mat'ls., American Bar Ass'n., Associated General Contractors, MD Business Roundtable, NJ DEPE, Ass'n. Energy Engineers, MD Safety Council, BOMA ASHRAE, CDC, MD Department of Education and others.

EDUCATION

Real Estate Asset Management Johns Hopkins University, 1995 to 1996.

Energy and Environmental Studies Princeton University Mechanical and Aerospace Engineering. Graduate student and research assistant, 1981-82.

Master of Science Mechanical Engineering, Thesis: Energy Estimation in Buildings
New Jersey Institute of Technology, 1979-81. (4.0 gpa)

Bachelor's degree Mathematics, Teacher certification, SUNY at Buffalo, 1971-76.

Physics/Engineering, Cooper Union, New York, Dean's List 1970-71,

Lawrence J. Schoen, P.E.: Statement of Qualifications for Howard County Public Transportation Board

Committee Memberships (current followed by past):

- Bicycle Advocates of Howard County Board
- Maryland Department of the Environment Air Quality Control Advisory Council
- Vice Chair of Standard for the Design of High Performance Green Buildings, ASHRAE Standard 189.1
- Past chair of Wilde Lake Village Board
- Past member of Columbia Association Active Transport Committee
- Past chair of American Society of Mechanical Engineers (ASME), Baltimore Section
- Chair of Healthy and Sustainable Buildings conference of the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) IAQ 2007
- Past chair and current member of ASHRAE's Environmental Health Committee
- Past member of International Mechanical Code Committee

I am a current user of public transit systems in Maryland, Washington, Northern Virginia and New York City and an avid cyclist, hiker and walker both for recreational and utilitarian purposes (getting from place to place). Over the years, I have seen effective use of public transportation around the world and personally used many transit systems and multiuse pathway systems as a resident / student in New York City, Newark, Beijing, Buffalo, Aix-en-Provence and Jerusalem; and as a visitor to multiple communities throughout the United States and in the Netherlands, Germany, France, Costa Rica, Britain, Ireland, Malaysia, Thailand, Italy, Belgium, Spain, Canada, China, etc.

In my professional life, I am a building services engineer, designing and evaluating mechanical and electrical systems in buildings including heating, air conditioning, ventilation, plumbing, lighting, electric power distribution, fire protection and vertical transportation. In this capacity I face practical considerations and effective use of funds on a daily basis. I teach courses and present lectures to colleagues and others in my field; write practice Standards, books and technical articles; and serve on numerous committees.